



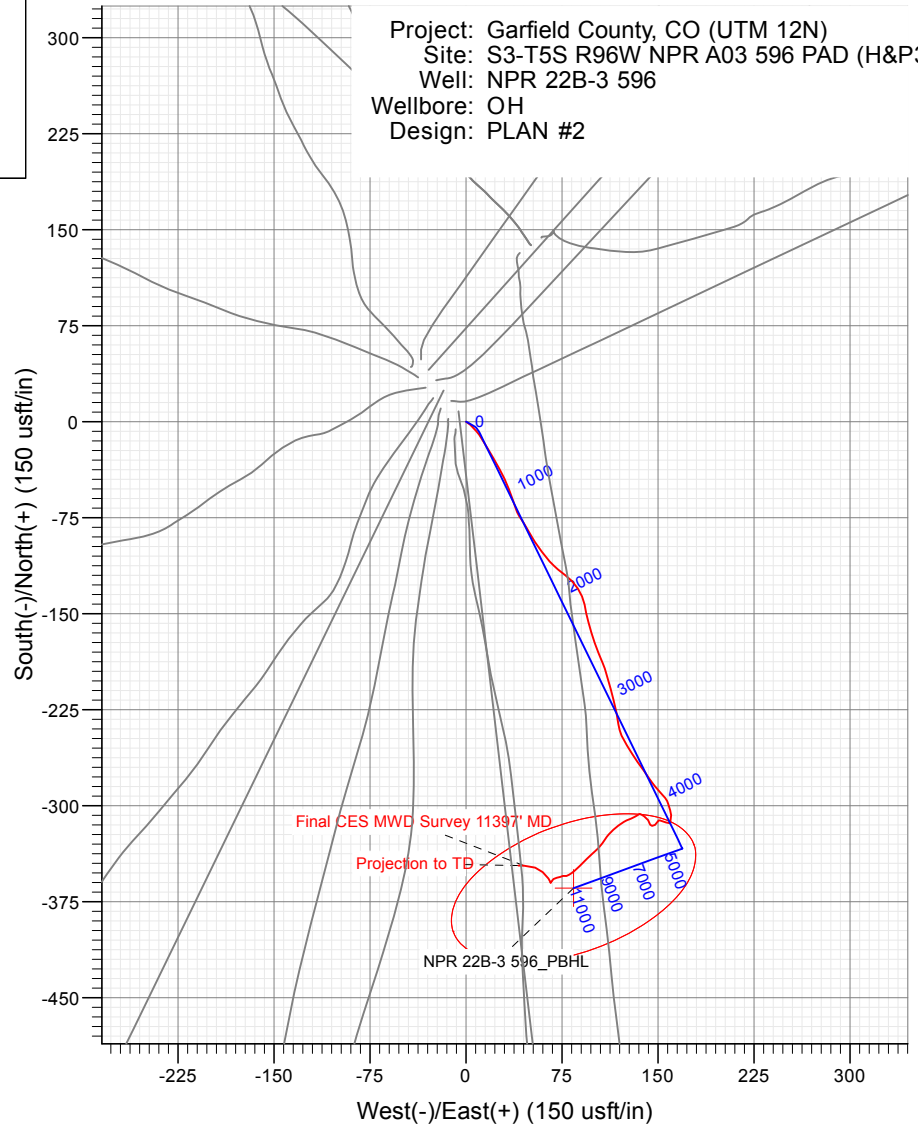
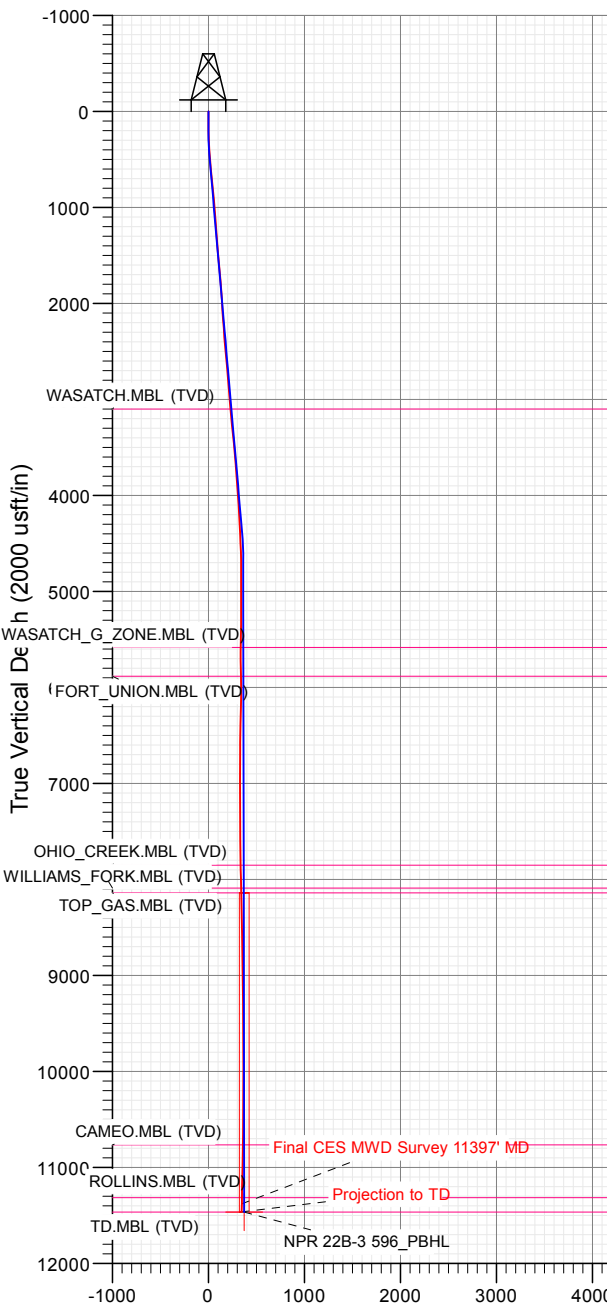
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	175.00	0.00	0.00	175.00	0.00	0.00	0.00	0.00	0.00	
3	275.00	3.00	120.00	274.95	-1.31	2.27	3.00	120.00	1.78	
4	365.00	3.00	120.00	364.83	-3.66	6.35	0.00	0.00	4.99	
5	468.34	5.10	153.99	467.92	-9.14	10.70	3.00	66.67	11.31	
6	4446.50	5.10	153.99	4430.35	-326.73	165.65	0.00	0.00	355.58	
7	4616.37	0.00	0.00	4600.00	-333.51	168.96	3.00	180.00	362.93	
8	4654.21	0.76	250.00	4637.84	-333.60	168.73	2.00	250.00	362.96	
9	11482.97	0.76	250.00	11466.00	-364.45	83.96	0.00	0.00	374.00	NPR 22B-3 596_PBHL

PLAN #2
 NPR 22B-3 596
 450337 195024
 GL+KB @ 8361.00usft (Original Well Elev)
 Ground Level @ 5331.00
 NAD 1927 - Western US
 Well NPR 22B-3 596, True North

Type	Target	Azimuth	Origin	Type	N/S	E/W	From	TVD	Latitude	Longitude
TD	No Target (Freehand)	167.03	Slot		0.00	0.00	0.00	0.00	39.646566	-108.147391
Name		TVD	+N/-S	+E/-W						
NPR 22B-3 596_PBHL		11466.00	-364.45	83.96						

Project: Garfield County, CO (UTM 12N)
 Site: S3-T5S R96W NPR A03 596 PAD (H&P330)
 Well: NPR 22B-3 596
 Wellbore: OH
 Design: PLAN #2



T M

Azimuths to True North
 Magnetic North: 9.57°

Magnetic Field
 Strength: 51350.8nT
 Dip Angle: 65.87°
 Date: 2/5/2019
 Model: HDGM_FILE

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3100.00	3110.86	WASATCH.MBL (TVD)
5584.00	5600.45	WASATCH_G_ZONE.MBL (TVD)
5884.00	5900.48	FORT UNION.MBL (TVD)
7852.00	7868.65	OHIO_CREEK.MBL (TVD)
8090.00	8106.67	WILLIAMS_FORK.MBL (TVD)
8140.00	8156.68	TOP_GAS.MBL (TVD)
10766.00	10782.90	CAMEO.MBL (TVD)
11316.00	11332.95	ROLLINS.MBL (TVD)
11466.00	11482.97	TD.MBL (TVD)

Vertical Section at 167.03° (2000 usft/in)

WELL DETAILS: NPR 22B-3 596

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14410476.60	2443468.30	39.647566	-108.147389



Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well NPR 22B-3 596
Project:	Garfield County, CO (UTM 12N)	TVD Reference:	GL+KB @ 8361.00usft (Original Well Elev)
Site:	S3-T5S R96W NPR A03 596 PAD (H&P330)	MD Reference:	GL+KB @ 8361.00usft (Original Well Elev)
Well:	NPR 22B-3 596	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Survey (H&P 330)	Database:	USA EDM 5000 Multi Users DB

Project	Garfield County, CO (UTM 12N)		
Map System:	Universal Transverse Mercator (US Survey Fee	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 - Western US		
Map Zone:	Zone 12N (114 W to 108 W)		

Site	S3-T5S R96W NPR A03 596 PAD (H&P330)				
Site Position:		Northing:	14,410,524.00 usft	Latitude:	39.647700
From:	Map	Easting:	2,443,431.60 usft	Longitude:	-108.147513
Position Uncertainty:	3.28 usft	Slot Radius:	13-3/16"	Grid Convergence:	1.82 °

Well	NPR 22B-3 596					
Well Position	+N/-S	0.00 usft	Northing:	14,410,476.60 usft	Latitude:	39.647566
	+E/-W	0.00 usft	Easting:	2,443,468.30 usft	Longitude:	-108.147389
Position Uncertainty		3.28 usft	Wellhead Elevation:	usft	Ground Level:	8,331.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM_FILE	2/5/2019	9.57	65.87	51,350.80000000

Design	Survey (H&P 330)				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	173.30	

Survey Program	Date	2/14/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
205.00	574.00	Survey #1 (OH)	INC+TREND	Inclinometer + known azi trend	
668.00	11,483.00	Survey #2 (OH)	MWD+HDGM	OWSG MWD + HDGM	

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Formations / Comments
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
205.00	1.27	125.75	204.98	-1.33	1.84	1.53	0.62	0.62	
297.00	2.99	133.93	296.92	-3.59	4.40	4.08	1.89	1.87	
389.00	3.87	139.73	388.75	-7.62	8.13	8.52	1.03	0.96	
481.00	4.75	147.99	480.49	-13.22	12.16	14.55	1.17	0.96	
574.00	5.49	149.31	573.12	-20.31	16.47	22.09	0.81	0.80	
668.00	6.15	150.98	666.63	-28.58	21.21	30.86	0.72	0.70	
762.00	5.36	149.39	760.16	-36.76	25.89	39.53	0.86	-0.84	
856.00	5.49	156.43	853.74	-44.66	29.92	47.85	0.72	0.14	
950.00	5.36	158.18	947.32	-52.86	33.35	56.39	0.22	-0.14	
1,138.00	4.22	162.23	1,134.66	-67.60	38.73	71.66	0.63	-0.61	
1,232.00	3.74	148.52	1,228.43	-73.51	41.38	77.83	1.13	-0.51	

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well NPR 22B-3 596
Project:	Garfield County, CO (UTM 12N)	TVD Reference:	GL+KB @ 8361.00usft (Original Well Elev)
Site:	S3-T5S R96W NPR A03 596 PAD (H&P330)	MD Reference:	GL+KB @ 8361.00usft (Original Well Elev)
Well:	NPR 22B-3 596	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Survey (H&P 330)	Database:	USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
1,326.00	5.14	147.11	1,322.15	-79.66	45.27	84.39	1.49	1.49	
1,420.00	4.75	152.56	1,415.80	-86.65	49.35	91.81	0.65	-0.41	
1,514.00	5.71	146.23	1,509.41	-93.99	53.74	99.62	1.19	1.02	
1,608.00	5.85	144.21	1,602.93	-101.76	59.15	107.97	0.26	0.15	
1,703.00	5.89	137.62	1,697.43	-109.29	65.26	116.16	0.71	0.04	
1,797.00	4.88	129.53	1,791.02	-115.40	71.60	122.96	1.34	-1.07	
1,891.00	4.26	126.54	1,884.72	-120.02	77.49	128.24	0.71	-0.66	
1,985.00	4.44	136.56	1,978.45	-124.74	82.79	133.55	0.83	0.19	
2,080.00	4.31	146.05	2,073.18	-130.37	87.31	139.67	0.77	-0.14	
2,174.00	4.22	157.22	2,166.92	-136.49	90.63	146.13	0.89	-0.10	
2,267.00	4.22	169.70	2,259.67	-143.02	92.56	152.83	0.99	0.00	
2,361.00	4.13	169.08	2,353.42	-149.74	93.82	159.66	0.11	-0.10	
2,455.00	4.57	164.78	2,447.15	-156.68	95.45	166.74	0.58	0.47	
2,550.00	5.49	163.37	2,541.78	-164.69	97.74	174.96	0.98	0.97	
2,644.00	5.01	160.12	2,635.38	-172.85	100.42	183.39	0.60	-0.51	
2,738.00	5.36	157.83	2,729.00	-180.78	103.48	191.61	0.43	0.37	
2,833.00	5.27	158.01	2,823.59	-188.93	106.78	200.10	0.10	-0.09	
2,927.00	4.18	163.19	2,917.27	-196.22	109.39	207.63	1.24	-1.16	
3,095.00	4.79	165.39	3,084.76	-208.87	112.93	220.61	0.38	0.36	
3,189.00	6.11	166.18	3,178.33	-217.52	115.12	229.46	1.41	1.40	
3,284.00	5.89	167.85	3,272.81	-227.20	117.35	239.33	0.30	-0.23	
3,378.00	5.63	172.42	3,366.33	-236.48	118.97	248.74	0.56	-0.28	
3,472.00	5.67	155.20	3,459.88	-245.27	121.53	257.77	1.80	0.04	
3,567.00	5.10	147.90	3,554.47	-253.11	125.74	266.04	0.94	-0.60	
3,661.00	4.44	149.31	3,648.14	-259.77	129.82	273.14	0.71	-0.70	
3,756.00	4.53	144.03	3,742.85	-265.97	133.90	279.77	0.44	0.09	
3,850.00	5.10	144.38	3,836.52	-272.37	138.51	286.67	0.61	0.61	
3,944.00	4.92	145.53	3,930.16	-279.09	143.23	293.89	0.22	-0.19	
4,039.00	3.78	140.87	4,024.88	-284.88	147.51	300.14	1.26	-1.20	
4,133.00	3.87	135.95	4,118.67	-289.56	151.67	305.28	0.36	0.10	
4,227.00	3.43	143.86	4,212.48	-294.11	155.54	310.25	0.71	-0.47	
4,322.00	3.16	162.75	4,307.33	-298.91	157.99	315.30	1.17	-0.28	
4,416.00	2.90	164.42	4,401.20	-303.68	159.40	320.19	0.29	-0.28	
4,511.00	1.76	176.55	4,496.12	-307.45	160.13	324.02	1.30	-1.20	
4,605.00	1.98	190.62	4,590.07	-310.48	159.92	327.01	0.54	0.23	
4,700.00	1.27	190.97	4,685.03	-313.13	159.41	329.58	0.75	-0.75	
4,794.00	0.26	49.02	4,779.02	-314.01	159.38	330.46	1.58	-1.07	
5,078.00	0.35	258.47	5,063.02	-313.76	159.01	330.17	0.21	0.03	
5,361.00	0.79	289.58	5,346.01	-313.28	156.33	329.38	0.18	0.16	
5,644.00	1.32	289.67	5,628.96	-311.53	151.42	327.06	0.19	0.19	
5,739.00	0.53	167.06	5,723.95	-311.59	150.49	327.02	1.75	-0.83	
6,022.00	1.58	235.00	6,006.91	-315.11	147.59	330.17	0.52	0.37	
6,116.00	1.41	269.45	6,100.88	-315.86	145.37	330.66	0.96	-0.18	
6,211.00	1.23	338.71	6,195.86	-314.92	143.83	329.54	1.59	-0.19	
6,399.00	1.23	332.38	6,383.81	-311.25	142.16	325.71	0.07	0.00	
6,588.00	1.45	297.23	6,572.76	-308.36	139.09	322.48	0.44	0.12	
6,682.00	1.54	304.70	6,666.73	-307.10	137.00	320.98	0.23	0.10	
6,776.00	0.48	252.67	6,760.72	-306.50	135.58	320.22	1.38	-1.13	
6,871.00	0.70	232.28	6,855.71	-306.97	134.74	320.59	0.32	0.23	
6,965.00	0.70	249.59	6,949.71	-307.52	133.75	321.02	0.22	0.00	
7,154.00	0.75	224.98	7,138.69	-308.80	131.80	322.06	0.17	0.03	
7,343.00	1.14	255.65	7,327.67	-310.14	129.10	323.08	0.33	0.21	
7,532.00	1.36	241.59	7,516.62	-311.67	125.30	324.16	0.20	0.12	

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well NPR 22B-3 596
Project:	Garfield County, CO (UTM 12N)	TVD Reference:	GL+KB @ 8361.00usft (Original Well Elev)
Site:	S3-T5S R96W NPR A03 596 PAD (H&P330)	MD Reference:	GL+KB @ 8361.00usft (Original Well Elev)
Well:	NPR 22B-3 596	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Survey (H&P 330)	Database:	USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Formations / Comments
7,626.00	1.67	240.10	7,610.59	-312.89	123.14	325.11	0.33	0.33	
7,720.00	1.41	241.42	7,704.55	-314.12	120.93	326.08	0.28	-0.28	
7,815.00	2.15	229.64	7,799.51	-315.84	118.55	327.51	0.86	0.78	
7,909.00	2.94	226.12	7,893.42	-318.65	115.47	329.94	0.86	0.84	
8,004.00	2.20	227.44	7,988.32	-321.57	112.37	332.48	0.78	-0.78	
8,098.00	2.29	214.87	8,082.25	-324.33	109.97	334.94	0.53	0.10	
8,249.00	2.42	215.31	8,233.12	-329.41	106.40	339.57	0.09	0.09	
8,381.00	1.85	225.16	8,365.03	-333.19	103.28	342.96	0.51	-0.43	
8,476.00	2.33	225.07	8,459.96	-335.63	100.82	345.10	0.51	0.51	
8,570.00	1.98	228.67	8,553.90	-338.05	98.25	347.20	0.40	-0.37	
8,664.00	1.71	229.99	8,647.85	-340.03	95.96	348.90	0.29	-0.29	
8,853.00	1.45	219.97	8,836.78	-343.67	92.26	352.09	0.20	-0.14	
8,947.00	1.71	225.07	8,930.74	-345.57	90.50	353.77	0.31	0.28	
9,041.00	2.59	227.97	9,024.67	-347.99	87.93	355.87	0.94	0.94	
9,136.00	2.11	230.96	9,119.59	-350.53	84.98	358.04	0.52	-0.51	
9,230.00	1.41	231.31	9,213.55	-352.34	82.73	359.58	0.74	-0.74	
9,324.00	1.85	234.82	9,307.51	-353.94	80.59	360.92	0.48	0.47	
9,418.00	1.06	262.33	9,401.48	-354.93	78.49	361.66	1.10	-0.84	
9,512.00	0.75	284.92	9,495.47	-354.88	77.03	361.44	0.50	-0.33	
9,606.00	1.06	250.64	9,589.46	-355.01	75.62	361.41	0.65	0.33	
9,701.00	1.49	254.60	9,684.44	-355.63	73.60	361.79	0.46	0.45	
9,795.00	1.93	254.86	9,778.39	-356.37	70.89	362.21	0.47	0.47	
9,889.00	1.41	240.54	9,872.35	-357.35	68.36	362.89	0.71	-0.55	
9,984.00	0.53	174.00	9,967.34	-358.36	67.39	363.78	1.36	-0.93	
10,078.00	0.40	256.01	10,061.34	-358.88	67.11	364.25	0.66	-0.14	
10,172.00	0.70	208.63	10,155.33	-359.46	66.52	364.76	0.55	0.32	
10,267.00	0.35	193.25	10,250.33	-360.25	66.17	365.51	0.39	-0.37	
10,361.00	0.09	343.54	10,344.33	-360.46	66.09	365.71	0.46	-0.28	
10,455.00	0.57	344.95	10,438.33	-359.94	65.95	365.17	0.51	0.51	
10,738.00	0.84	323.86	10,721.31	-356.90	64.36	361.97	0.13	0.10	
11,020.00	1.89	315.16	11,003.22	-351.94	59.86	356.51	0.38	0.37	
11,208.00	2.37	287.73	11,191.10	-348.55	53.97	352.47	0.59	0.26	
11,397.00	3.03	273.32	11,379.89	-347.07	45.26	349.98	0.50	0.35	Final CES MWD Survey 11397' MD
11,483.00	3.03	273.32	11,465.77	-346.81	40.72	349.19	0.00	0.00	Projection to TD

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Site:	S3-T5S R96W NPR A03 596 PAD (H&P330)	MD Reference:	GL+KB @ 8361.00usft (Original Well Elev)
Well:	NPR 22B-3 596	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Survey (H&P 330)	Database:	USA EDM 5000 Multi Users DB

Targets										
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
NPR 22B-3 596_PBH		0.00	0.00	11,466.00	-364.45	83.96	14,410,115.00	2,443,563.80	39.646566	-108.147091
- actual wellpath misses target center by 46.65usft at 11480.90usft MD (11463.67 TVD, -346.82 N, 40.83 E) - Ellipse (radii L100.00 W50.00 on 250.00 azi)										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
11,397.00	11,379.89	-347.07	45.26	Final CES MWD Survey 11397' MD	
11,483.00	11,465.77	-346.81	40.72	Projection to TD	

Checked By: _____ Approved By: _____ Date: _____